CPSC-I-05-0005

INTERAGENCY AGREEMENT

BETWEEN THE

U.S. CONSUMER PRODUCT SAFETY COMMISSION

AND THE

NAVAL SURFACE WARFARE CENTER (CRANE)

I. BACKGROUND

Consumers are using mobile devices at an increasing rate every year. Mobile devices, such as phones, handheld PCs, and laptops, require batteries with higher energy densities to meet consumer performance demands. One sector of the mobile industry that is growing at a significant rate is mobile phones; phones now include additional features such as cameras, voice recorders, PDA functions, and video playing. Consumers also expect and shop for devices that contain batteries that can last the longest and recharge in the least amount of time. The majority of the high-tech industry uses lithium-ion batteries. This fairly new battery technology can outperform previous rechargeable battery technologies, but it relies heavily on additional safety circuits.

High-energy density batteries, such as lithium-ion batteries, can experience an internal cell short that may cause the battery to overheat and explode, posing a potential hazard to consumers. Such a battery failure in a mobile phone may result in a greater hazard because of the close proximity of the phone to the body when in use or in the pocket/side clip during transit. The protective circuitry in the battery pack does not have the capability to stop the progression of an internal cell short. These incidents may occur while in-use or while charging.

In cooperation with the CPSC, NSWC (Crane) will evaluate the characteristics of small lithium-ion batteries when they become unstable from electrical shorting and overheating. As noted in Sections II & III of the Statement of Work, this research will provide the basis for reaching a number of objectives.

II. PURPOSE AND OBJECTIVES

The purpose of the project is to characterize the hazards associated with lithium-ion batteries when unstable.

As specified in Section III, and as listed below, the following objectives must be met to complete the project:

1. *Test 12 lithium-ion batteries.*
2. *Issue a report.*

Total cost $20K

III. STATEMENT OF WORK

NSWC will test 12 small size lithium-ion batteries, typically used in cell phones. The testing will be used to determine the feasibility of incorporating possible technologies in portable electronic equipment to reduce the hazards associated with unstable lithium-ion batteries. NSWC will record the characteristics of temperature and out-gassing pressure, as described below. CPSC will furnish the battery samples and the appropriate battery charging equipment. The battery samples and charging equipment are to be returned to CPSC upon completion of the testing. Each battery sample will be stored in a separate plastic bag with its sample designator written on the outside of the bag. NSWC will furnish all necessary personnel, materials, services, and facilities to complete the objectives list in Section II above and as described below in detail, unless otherwise stated.

The contractor may make adjustments as needed in the distribution of its resources as long as the total cost of the project is not increased and all project objectives are met.

A. TASKS

1. Test 12 cell phone batteries (CPSC will supply the cell phone batteries and chargers).

   a. Conduct 2 cycles of capacity testing on each battery sample.

   b. Test 9 battery samples as follows:

      Three (3) samples conduct over-voltage
      Three (3) samples conduct crushing test
      Three (3) samples conduct excessive external heating

      The following shall be recorded during the nine (9) tests:

      - Surface thermocouples on two largest sides of the battery (2 total)
      Ambient temperature and humidity before the test.
      Standard video of the testing
      Digital still pictures (setup, before, and after testing)
      Record input voltage, where applicable.
      Record external heating, where applicable.
      Method for correlating the video time stamp with the thermocouple

data.

c. Test 3 battery samples as follows;

One (1) sample conduct over-voltage
One (1) sample conduct excessive external heating
One (1) sample conduct either over-voltage or excessive over heating. (this test will be determined after CPSC and NSWC staff reviews the data from section 1(b).

The following shall be recorded during the three (3) tests:

Overall pressure volume change before, during, and after the test.
For excessive over heating, the temperature of the chamber shall be recorded.
For over-voltage, the input voltage shall be recorded.
Ambient temperature and humidity before the test.
Method for correlating the time stamp with the various recorded data.

d. Simple report describing the setup and results of the test (Word compatible)

e. Test data in electronic form that can be imported into Excel

2 . Issue a report: ***To be delivered not later than 6 months from the award of the Interagency Agreement or when NSWC has received the test samples from CPSC, whichever is the later date.***

Issue a report describing the tasks performed and findings for the entire project.

B. DELIVERY SCHEDULE

1. Testing - To be completed within 5 months after award date of the Interagency Agreement or when NSWC has received the test samples from CPSC, whichever is the later date.

2. Progress reports – Monthly (e-mail is acceptable)

Delivery of final report, battery samples, and CPSC supplied hardware : Not later than 6 months from the award date of the Interagency Agreement or when NSWC has received the test samples from CPSC, whichever is the later date.

3. Test data (in several formats, if appropriate) – Must be included with the final report.

IV. MODIFICATION AND CANCELATION

This agreement may be modified by mutual consent of both parties or canceled upon 60 days advance written notice by either party.

V. AUTHORITY

This agreement is entered into under Section 601 of the Economy Act, as amended (31 U.S.C. 1535) and the Consumer Product Safety Act.

VI. PAYMENT

U.S. Consumer Product Safety Commission agrees to pay Naval Surface Warfare Center (Crane) a total of $20,000.00 for these services. Payment shall be made through the Government On-Line Payment and Collection (OPAC) System or other methods deemed acceptable by both parties.

VII. TECHNICAL POINTS OF CONTACT

US Consumer Product Safety Commission

Arthur Lee
US Consumer Product Safety Commission
Engineering Sciences, Rm 611
4330 East West Hwy
Bethesda, Maryland 20814
Phone (301) 504-7539
Fax (301) 504-0533
e-mail alee@cpsc.gov

Naval Surface Warfare Center (Crane)

Mike Chatelain
Crane Division, Naval Surface Warfare Center
Code 6093, Building 3235
300 HWY 361
Crane, IN 47522-5001
Phone 812-854-5977
Fax 812-854-2043
e-mail michael.chatelain@navy.mil

VIII. DISAGREEMENTS

In the event that CPSC and CRANE have a disagreement arising under this Interagency Agreement, the parties shall cooperatively seek to resolve the disagreement by themselves. If the disagreement cannot be resolved between them, the parties agree to seek the assistance of a third party in resolving the disagreement.

IX. APPROPRIATIONS

FOR CPSC:

ALC: 61-00-0001
TIN: 520978750
DUNS: 069287522
TREAS CODE: 6150100
FUND CERT: 05 PS EXOB 4400 21660 253A

FOR CRANE:

ALC: N00164
TIN: 350869846
DUNS: 176545804

X. AUTHORITY

This Agreement is entered into under Section 601 of the Economy Act, as amended (31 U.S.C. 1535) and the Consumer Product Safety Act.

XI. FASA COMPLIANCE

As the servicing agency, CRANE agrees to act in full compliance with Section 1074 of the Federal Acquisition Streamlining Act (FASA) of 1994, entitled "Economy Act Purchases."

Approved and Accepted

Consumer Product Safety Commission:

BY: _____ 6/27/05
Donna Hutton DATE
Contracting Officer

Naval Surface Warfare Center (CRANE)

BY: _____ 6-15-05
Doug McDaniel DATE
Contracting Officer